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UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Brett E. Kugler

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Application No.: 09/895,702

Examiner: Randy Peaches

Filing Date: June 29, 2001

Group Art Unit: 2686

Title: BUSINESS CARD WITH INTEGRATED PAPER CELL PHONE

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TRANSMITTAL OF APPEAL BRIEF

Sir:

Transmitted herewith is the Appeal Brief in this application with respect to the Notice of Appeal filed on 10-03-2005.

The fee for filing this Appeal Brief is (37 CFR 1.17(c)) \$500.00.

(complete (a) or (b) as applicable)

The proceedings herein are for a patent application and the provisions of 37 CFR 1.136(a) apply.

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(X) (b) Applicant believes that no extension of time is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition and fee for extension of time.

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Respectfully submitted,

Brett E. Kugler

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PATENT

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PHONE

Attorney Docket: HP PDNO 10015144-1

APPELLANT'S BRIEF

This is Appellant's Brief filed in accordance with 37 CFR §1.192 appealing the Examiner's Final Rejection mailed July 27, 2005. Appellant's Notice of Appeal, pursuant to 37 CFR §1.191, is being filed concurrently herewith. This Brief is being submitted in triplicate. The enclosed transmittal form provides authorization to charge a deposit account the amount of \$500.00 for filing this Appeal Brief pursuant to 37 CFR §1.17(c).

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I. Real Party in Interest

The real party in interest for this appeal is the Hewlett-Packard Company of Fort Collins, Colorado, the Assignee of the application.

II. Related Appeals and Interferences

There are no related appeals or interferences.

III. Status of the Claims

Claims 1-6, 10-13, 15-17, 19 and 20 are pending in this application. Claims 1-4, 10, 11, 15-17, 19 and 20 stand rejected under 35 USC §103(a) as being unpatentable over U.S. Patent No. 5,965,848 issued to Altschul et al. (hereinafter Altschul '848) in view of the U.S. Patent No. 5,875,393 issued to Altschul et al. (hereinafter Altschul '393), Stephen Mraz, Machine Design, "Thin flexible battery needs no case" (hereinafter the Machine Design article) and Appellant's admitted prior art. Claim 5 stands rejected under 35 USC 103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article and U.S. Patent No. 6,317,086 issued to Woo et al. (hereinafter Woo). Claim 6 stands rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article and U.S. Patent No. 5,933,783 issued to Kawakami et al. (hereinafter Kawakami). Claim 12 stands rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article, Appellant's admitted prior art and Woo. Claim 13 stands rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article, Appellant's admitted prior art and Kawakami.

IV. Status of Amendments

All amendments have been entered.

V. Summary of the Invention

Appellant's invention is a business card 10 including a cellular telephone, where all or most of the components of the cellular telephone business card 10 are made of paper or paper related products. In one embodiment, the cellular telephone business card 10 is intended to automatically call the person or entity associated with the business card 10 by activating a switch 16, and not intended to receive telephone calls. Therefore, the cellular telephone business card 10 will not have its own number, or require a key-pad for dialing outgoing numbers.

The use of paper technologies for the circuitry and components of the cellular telephone business card 10 allow it to be the same, or nearly the same, size as a standard business card. The paper components of the cellular telephone business card 10 includes a paper input diaphragm 22 used as a microphone and a paper output diaphragm 24 used as an earphone. The paper diaphragms 22 and 24 are attached to a paper substrate that makes up the body of the business card 10 so that they can vibrate relative thereto. The cellular telephone business card 10 also includes a battery 26 formed to the paper substrate where the battery is made of paper technologies, such as thin battery cells laminated within a paper substrate. A printed integrated electrical circuit 30 is provided in the paper substrate to interconnect the cellular telephone components, where the circuit 30 is patterned on the paper substrate with conductive ink. A filament antenna 38 is formed in the substrate and electrically coupled to the circuit 30 to provide an antenna for the cellular telephone. The antenna 34 includes an end nub 36 that allows the antenna 34 to be retracted from the business card 10.

VI. Grounds of Rejection to be Reviewed on Appeal

Whether claims 1-4, 10, 11, 15-17, 19 and 20 should be rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article and Appellant's admitted prior art;

Whether claim 5 should be rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article and Woo;

Whether claim 6 should be rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article and Kawakami;

Whether claim 12 should be rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article, Appellant's admitted prior art and Woo; and

Whether claim 13 should be rejected under 35 USC §103(a) as being unpatentable over Altschul '848 in view of Altschul '393, the Machine Design article, Appellant's admitted prior art and Kawakami.

VII. Argument

A. Independent claims 1, 10 and 17 are not obvious in view of the combination of Altschul '848, Altschul '393, the Machine Design article and Appellant's admitted prior art.

1. Independent claims 1, 10 and 17

Claims 1 and 10 claim a cellular telephone including a paper substrate, a printed circuit patterned on the paper substrate with conductive ink, a paper input diaphragm electrically coupled to the circuit and formed on the paper substrate that allows it to

vibrate relative thereto, a paper output diaphragm electrically coupled to the circuit and formed to the paper substrate in such a manner that allows it to vibrate relative thereto, and a battery being made from paper technologies.

Claim 17 claims a method of making a disposable cellular telephone including providing a paper substrate, patterning a circuit on the substrate using conductive ink, attaching a paper input diaphragm to the substrate in a manner that allows the diaphragm to vibrate relative thereto, attaching a paper output diaphragm to the substrate in a manner that allows it to vibrate relative thereto, and forming a battery within the substrate that is made from paper technologies.

2. Prima facie obviousness

Appellant respectfully submits that the Examiner has improperly combined Altschul '848, Altschul '393, the Machine Design article and Appellant's admitted prior art to hold that Appellant's claimed invention is obvious under 35 USC §103(a). MPEP 2143 sets forth the basic requirements of a *prima facie* case of obviousness. Particularly, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Further, there must be a reasonable expectation of success. Also, the prior art references must teach or suggest all of the claim limitations. Appellant submits that the Examiner has not met any of these three criteria.

3. Altschul '848

Altschul '848 discloses a disposable electronic device, particularly a wireless telephone 20 having a body 22. Altschul '848 states that the body 22 is a ribbon-like substrate 64 made of a dielectric material (column 3, line 20). The Examiner has

suggested that the dielectric material could be paper, although Altschul '848 does not specifically state that. What Altschul '848 does state is that the body has a mechanical stiffness and strength that enables the telephone 20 to be handheld during use in telephonic communications (column 2, lines 60-63). Appellant's claimed invention is a business card cellular telephone that is made from paper. Appellant submits that Altschul '848 does not contemplate such a cellular telephone that includes a paper substrate as suggested by the Examiner.

Further, Altschul '848 does not teach or suggest any of the other paper elements of Appellant's independent claims, particularly a paper input and output diaphragm, a battery made from paper technologies and a printed circuit patterned on the paper substrate with conductive ink. Obviously the Altschul '848 telephone 20 includes input and output diaphragms, a battery and a circuit. However, none of these components in the telephone 20 are paper components. The Altschul '848 circuit includes regular electrical components 80. The Altschul '848 battery 46 is a regular 9 volt battery and the speaker 40 and the microphone 42 are regular metal components. The circuit trace 66 described in column 3, lines 29 – 34 is not conductive ink.

4. Altschul '393

Altschul '393 discloses a disposable wireless telephone 110. The Examiner has suggested that Altschul '393 discloses Appellant's claimed input diaphragm, output diaphragm and battery. The Altschul '393 input diaphragm is the microphone assembly 122, the output diaphragm is earphone assembly 120 and the battery is battery 140. It is clear from figures 10 and 11 and the related text that the earphone 120 and the microphone 122 are metal components and the battery 140 is a regular 9 volt battery. The earphone 120, the microphone 122 and the battery 140 are mounted to an

integrated body 112. Nowhere in Altschul '393 does it state that the integrated body 112 is made of paper. The Altschul '393 telephone 110 includes a circuit board 152 mounted to a core 150. Nowhere in Altschul '393 does it state that the circuit board 152 uses conductive ink printed on a paper substrate.

5. The Machine Design article

The Machine Design article discloses a battery or power paper cell that can be fabricated by printing, pasting or laminating onto a paper substrate. The Machine Design article discloses a few uses for the power paper cell, specifically single-use medical devices, smart cards and tags and multi-media enhancements for entertainment devices, such as 3-D cards. No mention is made in the Machine Design article of using the battery in a disposable paper telephone or providing it in a paper substrate.

6. Appellant's admitted prior art

Appellant admits on page 5 that paper speaker technology exists in the art. Appellant further states that this speaker technology can be miniaturized for the cellular telephone business card of the invention. However, Appellant has not admitted that it was known in the art to do the miniaturization for the purpose to provide paper diaphragms that would fit on a business card. Further, Appellant has not admitted that a cellular telephone business card is known in the art that includes a combination of a paper substrate, paper diaphragms, conductive ink and a battery made of paper technologies.

7. Discussion

Appellant submits that the Examiner has improperly combined Altschul '848, Altschul '393, the Machine Design article and Appellant's admitted prior art to hold that independent claims 1, 10 and 17 are obvious. Altschul '848 and '393 do disclose disposable telephones, but clearly do not disclose the type of business card cellular telephone of Appellant's invention that includes all of the paper features that allow it to be the size of a business card. The Examiner states in the Office Action that Altschul '393 teaches a microphone assembly 122 that reads on the claimed input diaphragm and an earphone assembly 120 that reads on the output diaphragm. However, as discussed above, the microphone assembly and earphone assembly of Altschul '393 are not made of paper, and therefore cannot read on the input and output diaphragm of Appellant's claims. Further, nothing in the prior art of record teaches using conductive ink on a paper substrate to provide a cellular telephone circuit.

Appellant submits the Examiner has not found all of the claimed elements in the various pieces of prior art, particularly a printed circuit made of conductive ink, a paper substrate, and paper input and output diaphragms. Appellant cannot even make the argument that it is improper to combine the reference teachings in the manner that the Examiner has done because those teachings do not even exist in the first place.

B. The dependent claims are not obvious in view of any combination of Altschul '848, Altschul '393, the Machine Design article, Appellant's admitted prior art, Woo and Kawakami.

Dependent claims 2 and 15 state that the paper substrate has a length of about 3.5 inches and a width of about 2 inches, the standard size of a business card. The Examiner states that this limitation of Appellant's invention is found in column 2, lines 44-52 of Altschul '848. That section of Altschul '848 is recreated below.

Referring now to the drawing, and especially to FIG. 1 thereof, a disposable portable electronic device constructed in accordance with the present invention is shown in the form of a wireless telephone 20 having a body 22 of prescribed length L, width W and thickness T. Length L extends longitudinally between a first end 24 and a second end 26, width W extends between laterally opposite sides 30 and 32, and thickness T lies between front face 34 and back face 36. An earphone assembly 40 is connected to body 22 at the first end 24, preferably offset toward one side 30 of the body 22, and a microphone assembly 42 is connected to the body 22 at the second end 26. A keypad 44 is located at the front face 34 and a power battery 46 (see FIG. 5) is housed within a battery housing 50 attached to the body 22 at the rear face 36.

This section of Altschul '848 talks about the length L, the width W and the thickness T of the body 22 of the wireless telephone 20, but does not say anything about making the body 22 the size of a business card.

Dependent claims 4, 5, 11, 12 and 20 state that the cellular telephone includes an antenna formed in an edge of the paper substrate that can be extracted from the substrate to make the call. Woo discloses a helical antenna 12 attached to an antenna housing 12 that can be extended and contracted from a wireless apparatus including a main body 99. The main body 99 is not a paper substrate and the apparatus is not a cellular telephone business card as claimed by Appellant.

Kawakami discloses a portable terminal A1 that includes an LCD display channel 20, an antenna 12, a telephone transmitter 14, a telephone receiver 16, a power actuation switch 18 and a pen holder 23. Kawakami does not teach or suggest a cellular telephone including a paper substrate, a printed circuit including conductive ink, paper diaphragms or a battery made of paper technologies. It is unclear to Appellant why the Examiner cited this reference.

VIII. Conclusion

Appellant respectfully submits that claims 1-6, 10-13, 15-17, 19 and 20 are not obvious in view of any combination of Altschul '848, Altschul '393, the Machine Design article, Appellant's admitted prior art, Woo and Kawakami. It is therefore respectfully requested that the Examiner's Final Rejection under 35 USC §103(a) be reversed, and that Appellant's claims be allowed.

Respectfully submitted,

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CLAIMS APPENDIX

COPY OF CLAIMS INVOLVED IN THE APPEAL

Claim 1 A cellular telephone comprising:

 a paper substrate;

 a printed circuit patterned on the paper substrate with conductive ink;

 a switch formed on the paper substrate and electrically coupled to the circuit;

 a paper input diaphragm electrically coupled to the circuit, said input diaphragm being formed to the paper substrate in such a manner that allows the input diaphragm to vibrate relative thereto;

 a paper output diaphragm electrically coupled to the circuit, said output diaphragm being formed to the paper substrate in such a manner that allows the output diaphragm to vibrate relative thereto; and

 a battery electrically coupled to the circuit and formed in the paper substrate, said battery being made from paper technologies, said switch being activated to cause the cellular telephone to call a predetermined number.

Claim 2 The cellular telephone according to claim 1 wherein the paper substrate has a length of about 3.5 inches and a width of about 2 inches.

Claim 3 The cellular telephone according to claim 1 wherein the paper substrate is a business card including writing thereon.

Claim 4 The cellular telephone according to claim 1 further comprising a filament antenna, said filament antenna being formed in an edge of the paper substrate.

Claim 5 The cellular telephone according to claim 4 wherein the antenna includes a nub at one end, said nub being operable to extract the antenna from the substrate.

Claim 6 The cellular telephone according to claim 1 wherein the switch is a slidable switch.

Claims 7-9. Cancelled.

Claim 10 A paper business card comprising:
a paper substrate having a front surface layer and a back surface layer, said paper substrate including writing on the front layer;
a printed circuit patterned on the paper substrate with conductive ink;
a switch electrically coupled to the circuit;
a paper microphone diaphragm electrically coupled to the circuit, said microphone diaphragm being attached to the paper substrate in such a manner that allows the microphone diaphragm to vibrate relative thereto;
a paper speaker diaphragm electrically coupled to the circuit, said speaker diaphragm being attached to the paper substrate in such a manner that allows the speaker diaphragm to vibrate relative thereto; and

a battery electrically coupled to the circuit and formed in the paper substrate, said battery being made from paper technologies, said switch being activated to cause the business card to call a predetermined number.

Claim 11 The card according to claim 10 further comprising a filament antenna, said filament antenna being formed in an edge of the paper substrate.

Claim 12 The card according to claim 11 wherein the antenna includes a nub at one end, said nub being operable to extract the antenna from the substrate.

Claim 13 The card according to claim 10 wherein the switch is a slidable switch.

Claim 14 Cancelled.

Claim 15 The card according to claim 10 wherein the paper substrate has a length of about 3.5 inches and a width of about 2 inches.

Claim 16 The card according to claim 10 wherein the switch is formed on the front layer and the microphone and speaker diaphragms are formed on the back layer.

Claim 17 A method of making a disposable cellular telephone, comprising:
providing a paper substrate;
patterning a circuit on the substrate using conductive ink;

attaching a paper input diaphragm to the substrate in a manner that allows the input diaphragm to vibrate relative thereto;

attaching a paper output diaphragm to the substrate in a manner that allows the output diaphragm to vibrate relative thereto; and

forming a battery within the substrate, said battery being made from paper technologies.

Claim 18 Cancelled.

Claim 19 The method according to claim 17 wherein the paper substrate is a business card having writing thereon.

Claim 20 The method according to claim 17 further comprising attaching a filament antenna to the substrate.

EVIDENCE APPENDIX

There is no evidence pursuant to §1.130, §1.131 or §1.132.

RELATED PROCEEDINGS APPENDIX

There are no decisions rendered by a court or the Board in any proceeding identified in Section II of this Appeal Brief.